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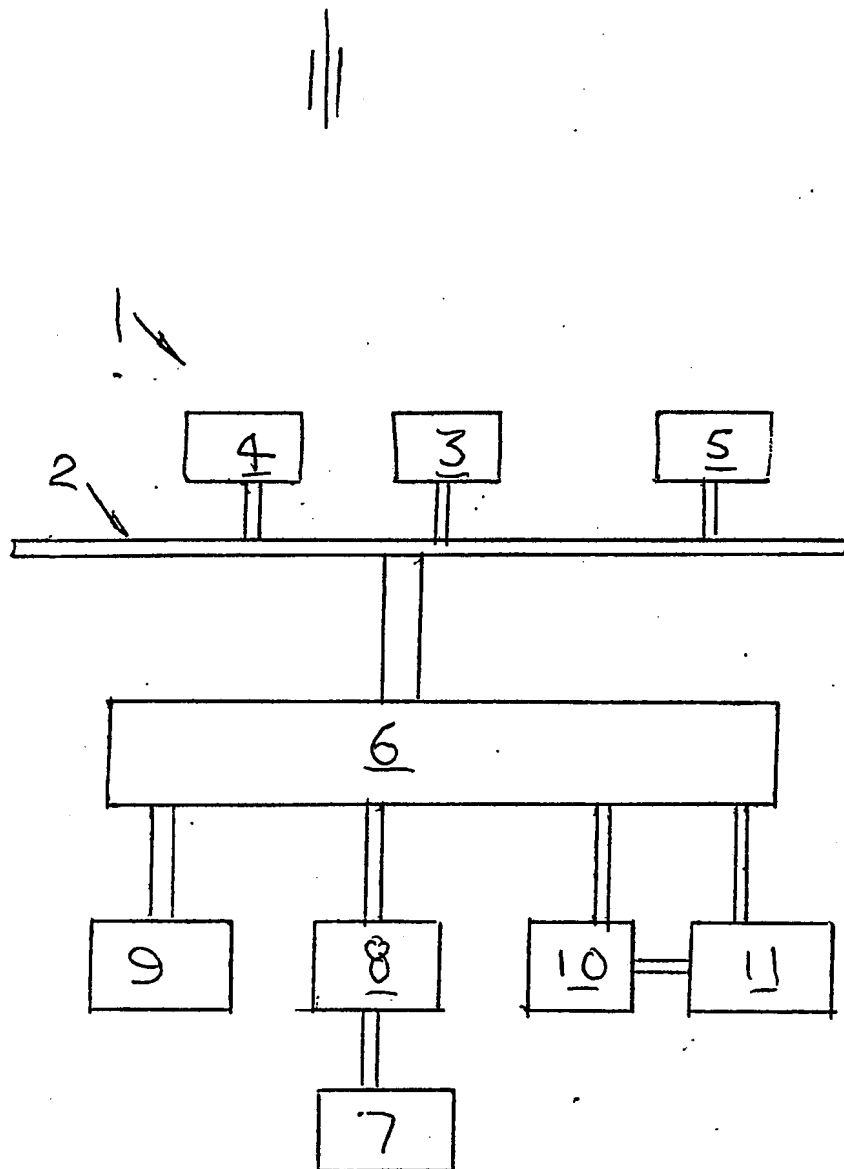
(58) Field of search
G4H
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(54) Parameter checking apparatus

(57) A parameter checking or monitoring apparatus includes for entering pretermind information types into the input of means for enabling predetermined calculations to be performed on the information. The inputted information and the results of the calculations can be displayed as required. Access to the use of the apparatus is controlled by a code system. The code system enables control of the type of data that can be introduced and also who can introduce or obtain information from the apparatus.

Preferably a double code arrangement is used in which a first number of digits controls form of data input and a second number of digits controls access to predetermined factors relating to the data input.

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SPECIFICATION

Parameter checking apparatus

5 This invention is concerned with apparatus for facilitating the checking or monitoring of predetermined inter-relationships between predefined parameters.

10 In a particular application the present invention relates to apparatus for facilitating the control of stock, feed stocks or the like in manufacturing, commercial or other locations in which it is desired to be able to maintain a frequent check on the ongoing situation in relation to stock levels, the input or replacement of stock and the relative relationships between the movements of items of stock.

15 A particular application of the apparatus of the invention is to the control and checking of the historical and instantaneous stock position of establishments in the licensed retail trade; that is premises commonly called public-houses, off-licences or the like.

20 Whilst the following discussion will be particularly directed principally to the licensed retail trades it will be appreciated that the proposals of the invention in relation to the checking of stock can be applied to other activities in which it is required to be able to check or monitor stock movements or the like. For example, the apparatus could well be applied to the monitoring of operational speeds and stock usage of machine tools; time monitoring.

25 In the case of the licensed retail trade it will be appreciated that the problems of stock control and the monitoring of numerical data both in terms of quantities and costs associated therewith are particularly complex because of the various ways in which alcoholic beverages are sold. In practice, there is considerable variation in how such beverages are packaged and ultimately presented to the customer. Furthermore, there are the added complications of the various taxes imposed upon the various types of beverage and foodstuffs that are often sold in licensed premises.

30 Broadly, according to an aspect of the invention there is provided a parameter checking or monitoring apparatus in which means are provided for entering predetermined types of information, means are provided for enabling calculations to be performed on such information, means are provided for enabling presentation of the inputted information and the results of said calculations, and in which means are provided for controlling the access to the feeding-in of pre-defined types of data to the apparatus and the display or other presentation of such data or any information derived therefrom.

35 Conveniently, in the case of stock control each item of stock or the like to be checked by the use of the apparatus is identifiable by a pre-defined identification code, and in the case of certain aspects of information factors associated with particular coded items a second identification code is required in order that these particular factors can be introduced into or displayed by the apparatus.

40 Preferably, the codes for identification of individual items involves three digits, whilst the codes

relating said information factors involve six digits.

Preferably, the normal intended user of the apparatus can only have access to the six digit codes if especially authorised.

70 For a better understanding of the invention reference will now be made to the accompanying drawing which is a schematic representation in block diagram form of an embodiment of apparatus in the form of a hand holdable terminal unit for providing the features of the invention

75 In the drawing, the main components of the unit 1 are shown connected with a common bus 2 for control signals and information and data signals. The apparatus includes a major section 3 which can conveniently be termed a calculator section. This section 3 includes a central processing unit which incorporates a microprocessor chip and associated control circuitry which latter is conveniently in the form of a printed circuit board. The section 3 also includes at least one read only memory chip 4, and at least one random access memory 5.

80 The bus 2 additionally connects with a number of functional units by way of an input/output interface unit 6. The functional units include a manually operable keyboard unit 7 which is connected to the interface unit 6 through a security signal decoder unit 8. A display unit 9 and printer 10 are likewise connected with the bus 2. A power interface unit 11 connects a voltage supply to the bus 2 and direct to the printer unit 10. The power interface unit 11 conveniently includes rechargeable batteries, a battery charger arrangement and suitable transformer and rectifier arrangements for enabling use of a mains supply for the purposes of recharging the batteries.

100 The various functional units connected with the bus 2 will be pre-conditioned to be able to perform the various calculations relevant to the use and presentation of the various items of information related to the control and checking of the stock.

105 As the apparatus is required to be able to receive the counts of a wide range of items of stock, the input price of such stock items, the required selling price of such items of stock, the entry of information relating to the delivery of fresh or replacement stock, changes of buying prices and selling prices, the various operational parameters of the function units will be conditioned so as to be responsive to such factors. Bearing in mind that the conventional retail premises usually carries a considerable number of different items or lines of stock the apparatus of the invention requires that each such item or line is uniquely indexed, tagged or the like with an identification code. Conveniently this can be a three digit code. If the number of stock items or lines is larger than the number of items that can be accommodated with three digit code more digits could be used.

110 The keyboard unit 7 will incorporate a plurality of keys which are effectively dedicated keys in that these particular keys are specifically associated either with a particular type of data input or a specific calculative function required.

125 The calculative functions can include determining the total stocks of any item; the stock movements of such items of stock between successive inputs of

data relative to the particular stock items; the values of stock sold and/or retained in respect of each stock item or line involved; calculations of total stock movements; the relevant profits; taxes together with indications as to the rate of change of stock levels so as to enable prediction of stock ordering and delivery requirements.

For the purposes of security it is desirable that certain aspects of the information introduced into the apparatus should not be freely available to any person likely to handle the terminal. Such data may be those concerned with financial matters such as buying and selling prices, profit margins.

In order to restrict access to such information arrangements are made for coding such information in such manner that the information can only be introduced into the relevant sections of the apparatus following the use of a security code which may be six figure digit which has to be introduced into the terminal to cause the security decoder unit to allow access of such information into the terminal.

Furthermore, a similar security code would be required to obtain release of the information considered confidential for display at the display 7 or for presentation to the printer unit.

By means of the security codes it is possible to ensure that only authorised persons have access to the confidential information both at the time of input and also at the time of presentation of the information contained in the terminal. The use of the security codes can be linked to specified ones of the dedicated keys of the keyboard.

In the use of the apparatus an authorised user having access to the relevant security code or codes associated with the apparatus can enter into the terminal the above discussed financial data related to the coded items or lines of stock. After which the day-to-day user of the terminal can enter numerical data about the movements of stock such as the amounts in store, the amounts added to store and the amounts transferred elsewhere if this should be a factor of consequence.

The entry data relative to stock items can be on a random basis since the apparatus will by reason of the need to use the code associated with the item ensure that the collected information is uniquely associated with the item.

During the collection of the stock information in terms of quantity the relevant totals can be displayed by the display unit 7 and progressively printed-out. Alternatively the printing-out can be effected at the end of a data collection operation.

Conveniently, provision may be made for providing an item checking feature which displays the codes of those items which have not been considered during a stock checking operation. This feature will assist in ensuring that items are not overlooked.

Following the collection of data the dedicated keys which are allowably operable to the general user may be actuated to provide the collective information allowable for consideration by the general user. The confidential information dedicated keys will be functionally inoperable until the correct security code is used.

A further use of the concepts of the invention is in connection with the supply of materials to machines and machine shops or the like. It will be clear that it is of considerable importance to be able to check and monitor the stock position in relation to feed stocks to machine tools and production machines so as to ensure a continuous and smooth production facility.

The apparatus of the invention can also be used in relation to the monitoring of time factors involved in the efficient running and control of machines.

CLAIMS

1. A parameter checking or monitoring apparatus in which means are provided for entering predetermined types of information, means are provided for enabling calculations to be performed on such information, means are provided for enabling presentation of the inputted information and the results of said calculations, and in which means are provided for controlling the access to the feeding-in of pre-defined types of data to the apparatus and the display or other presentation of such data or any information derived therefrom.

2. A parameter checking or monitoring apparatus as claimed in claim 1, and wherein in the case of stock control each item of stock or the like to be checked by the use of the apparatus is identifiable by a predefined identification code, and in the case of certain aspects of information, factors associated with particular coded items a second identification code is required in order that these particular features can be introduced into or displayed by the apparatus.

3. A parameter checking or monitoring apparatus as claimed in claim 1 or claim 2, and wherein the codes for identification of individual times involves three digits, and wherein the codes relating to said information factors involve six digits.

4. A parameter checking or monitoring apparatus as claimed in claim 3, wherein an allowed user of the apparatus is restricted to access to the six digit codes unless especially authorised.

5. A parameter checking or monitoring apparatus constructed and arranged to operate substantially as hereinbefore described with reference to the accompanying drawing.